

# LAYERED MODULATION FOR TERRESTRIAL ATSC APPLICATIONS

## ABSTRACT OF THE DISCLOSURE

Systems and methods are disclosed for applying layered modulation to an 8-VSB signal as used in the Advanced Television Systems Committee (ATSC) digital television signal. A system for transmitting the layered signal includes a first antenna for transmitting an upper layer signal comprising an 8-VSB signal and a second antenna for transmitting a lower layer signal. A layered modulation signal comprises the upper layer signal and the lower layer signal both interfering in a common frequency band. At least one receiver demodulates the upper layer signal directly from the layered modulation signal and demodulates the lower layer signal after subtracting the upper layer signal from the layered modulation signal. The second antenna can have a selectively limited range so that the lower layer signal does not interfere with the upper layer signal in a range where the lower layer signal could not be demodulated.

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